#5

SEQUENCE LISTING

<110> Cho, Myeong-Je
Lemaux, Peggy G.
Buchanan, Bob B.
Wong, Joshua
Marx, Corina

<120> Value-Added Traits in Grain and Seed
Transformed with Thioredoxin

<130> 2001-0703.30

<140> US 09/538,864
<141> 2000-03-29

<150> US 60/126,736
<151> 1999-03-29

<150> US 60/127,198
<151> 1999-03-31

<150> US 60/169,162
<151> 1999-12-06

<150> US 60/177,740
<151> 2000-01-21

<150> US 60/177,739
<151> 2000-01-21

<160> 25

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 486
<212> DNA
<213> Artificial Sequence

<220>
<223> barley B1-hordein promoter and signal sequence

<400> 1
aagctttaac aacccacaca ttgattgcaa cttagtccta cacaagtttt ccattcttgt 60
ttcaggctaa caacctatac aaggttccaa aatcatgcaa aagtgatgct aggttgataa 120
tgtgtgacat gtaaagtgaa taaggtgagt catgcatacc aaacctcggg atttctatac 180
tttgtgtatg atcatatgca caactaaaag gcaactttga ttatcaattg aaaagtaccg 240
cttgtagctt gtgcaaccta acacaatgtc caaaaatcca tttgcaaaag catccaaaca 300
caattgttaa agctgttcaa acaaacaaag aagagatgaa gcctggctac tataaatagg 360
caggtagtat agagatctac acaagcacaa gcatcaaaac caagaaacac tagttaacac 420
caatccacta tgaagacctt cctcatcttt gcactcctcg ccattgcggc aacaagtacg 480
attgca 486

<210> 2

<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> barley B1-hordein signal protein

<400> 2
Met Lys Thr Phe Leu Ile Phe Ala Leu Leu Ala Ile Ala Ala Thr Ser
 1   5   10   15
Thr Ile Ala

<210> 3
<211> 497
<212> DNA
<213> Artificial Sequence

<220>
<223> Barley D-hordein promoter and signal sequence

<400> 3
cttcgagtgc ccgccgattt gccagcaatg gctaacagac acatattctg ccaaaacccc 60
agaacaataa tcacttctcg tagatgaaga gaacagacca agatacaaac gtccacgctt 120
cagcaaacag taccccagaa ctaggattaa gccgattacg cggctttagc agaccgtcca 180
aaaaaactgt tttgcaaagc tccaattcct ccttgcttat ccaatttctt ttgtgttggc 240
aaactgcact tgtccaaccg attttgttct tcccgtgttt cttcttaggc taactaacac 300
agccgtgcac atagccatgg tccggaatct tcacctcgtc cctataaaag cccagccaat 360
ctccacaatc tcatcatcac cgagaacacc gagaaccaca aaactagaga tcaattcatt 420
gacagtccac cgagatggct aagcggctgg tcctctttgt ggcggtaatc gtcgccctcg 480
tggctctcac caccgct   497

<210> 4
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> barley D-hordein signal protein

<400> 4
Ala Lys Arg Leu Val Leu Phe Val Ala Val Ile Val Ala Leu Val Ala
 1   5   10   15
Leu Thr Thr Ala
            20

<210> 5
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 5
atatctagaa tggcggcgtc ggcggcga   28

<210> 6
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 6
atagagctct tactgggccg cgtgtag 27

<210> 7
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 7
gtaaagcttt aacaacccac acattg 26

<210> 8
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 8
ccgacgccgc tgcaatcgta cttgttgccg caat 34

<210> 9
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 9
agaaagcttg gtacccttcg agtgcccgcc gat 33

<210> 10
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 10
gaacagctcc tcgcccttgc tcacagcggt ggtgagagcc acgagggc 48

<210> 11
<211> 19

<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 11
ccaagaagtt cccagctgc 19

<210> 12
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 12
aactctagac tcggtggact gtcaatg 27

<210> 13
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 13
catcgagaca agcacggtca acttc 25

<210> 14
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 14
atatccgagc gcctcgtgca tgcg 24

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 15
caagatggat tgcacgcagg ttct 24

<210> 16
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 16
atagaaggcg atgcgctgcg aat 23

<210> 17
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 17
cggaattcga tctagtaaca tagatgaca 29

<210> 18
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 18
ggtctagaat ggaaactcac aaaacc 26

<210> 19
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 19
atagctgcga caaccctgtc ctt 23

<210> 20
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 20
gggagctctc aatcactctt accctc 26

<210> 21
<211> 21
<212> DNA
<213> Artificial Sequence

<220>

<223> primer

<400> 21
aagcctgaac tcaccgcgac g 21

<210> 22
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 22
aagaccaatg cggagcatat ac 22

<210> 23
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 23
ggcgcatgcg aattcgaatt cgatatcgat cttcga 36

<210> 24
<211> 369
<212> DNA
<213> barley

<220>
<221> misc_feature
<222> (0)...(0)
<223> thioredoxin h

<400> 24
atggcggcgt cggcaacggc ggcggcagtg gcggcggagg tgatctcggt ccacagcctg 60
gagcagtgga ccatgcagat cgaggaggcc aacaccgcca agaagctggt ggtgattgac 120
ttcactgcat catggtgcgg accatgccgc atcatggctc cagttttcgc tgatctcgcc 180
aagaagttcc caaatgctgt tttcctcaag gtcgacgtgg atgaactgaa gcccattgct 240
gagcaattca gtgtcgaggc catgccaacg ttcctgttca tgaaggaagg agacgtcaag 300
gacagggttg tcggagctat caaggaggaa ctgaccgcca aggttgggct tcacgcggcg 360
gcccagtaa 369

<210> 25
<211> 122
<212> PRT
<213> barley

<220>
<221> VARIANT
<222> (0)...(0)
<223> thioredoxin h

<400> 25

```
Met Ala Ala Ser Ala Thr Ala Ala Ala Val Ala Ala Glu Val Ile Ser
 1               5                  10                  15
Val His Ser Leu Glu Gln Trp Thr Met Gln Ile Glu Glu Ala Asn Thr
            20                  25                  30
Ala Lys Lys Leu Val Val Ile Asp Phe Thr Ala Ser Trp Cys Gly Pro
        35                  40                  45
Cys Arg Ile Met Ala Pro Val Phe Ala Asp Leu Ala Lys Lys Phe Pro
    50                  55                  60
Asn Ala Val Phe Leu Lys Val Asp Val Asp Glu Leu Lys Pro Ile Ala
65                  70                  75                  80
Glu Gln Phe Ser Val Glu Ala Met Pro Thr Phe Leu Phe Met Lys Glu
                85                  90                  95
Gly Asp Val Lys Asp Arg Val Val Gly Ala Ile Lys Glu Glu Leu Thr
            100                 105                 110
Ala Lys Val Gly Leu His Ala Ala Ala Gln
        115                 120
```